

Mining

- **Native Metals:**
 - Those found uncombined (in elemental form)
 - Eg gold nuggets
- **Compounds:**
 - Those found combined with other elements
 - Eg Aluminium

What do we mine?

- **Minerals**
 - are naturally occurring substances
 - Have a definite chemical composition
 - Usually a mixture of elements
 - Gold and Diamonds are pure
 - Aluminium is found as bauxite (aluminium mixed with oxygen and hydrogen)

- **Extracting Ore (mining)**
 - Underground vs Open Cut
- **Processing of Ore**
 - Separated based on element's properties
 - Eg density
 - reactivity

- **Ores**
 - Rock that has enough useful minerals for mining
 - Iron ore (haematite)
 - Bauxite

Gold Mining

- **Panning for gold**
 - Occurs in river bed – where gold is deposited as sediment



Gold Mining

- Underground mining
 - Where tunnels and shafts are dug underground



Gold Mining

- Open Cut
 - Where the ore is mined out in steps
 - Kalgoorlie (Western Australia)











Gold Extraction

1. **Crushing**
 - Breaks rock into fist size
2. **Grinding**
 - Grinds rock into small particles
3. **Froth flotation**
 - Use of chemicals to extract gold
4. **Roasting**
 - The froth is then heated
5. **Carbon In Leach**
 - The heated material is combined with carbon to remove Gold
6. **Gold recovery**
 - Carbon is removed and the gold extracted via electrolysis



- <..\..\resources\Videos\Geology\Superpit Kalgoorlie\Superpit Kalgoorlie-history.mp4>
- <..\..\resources\Videos\Geology\Superpit Kalgoorlie\Superpit Kalgoorlie-Intro.mp4>
- <..\..\resources\Videos\Geology\Superpit Kalgoorlie\Superpit Kalgoorlie-protecting our future.mp4>

